General Information

Course name	Terrestrial Laser Scanning	**ECTS Credits**	**4**
		Semester	summer 4 hours/week

Aims

The main learning outcomes include theoretical and practical skills in terrestrial laser scanning. Students understand laser scanning terminology, students can apply various approaches and methods of laser scanning.

By the end of the course the student will be able to:
- understand main organisational and operational issues of terrestrial laser scanning
- data acquisition and processing

Contents

Basic principles of terrestrial laser scanning
Transformations of selected global/local coordinates systems
Physical aspects of terrestrial laser scanning
Theory of laser scanning geometry
Registration of raw data
Data formats, visualisation and export data procedures
Generating derived data based on selected parameters
Generating mesh
Volume analysis using terrestrial laser data

Assessment Methods and Criteria

The assessment of the module combines continuous control and exam. The continuous control is undertaken three times during the semester (written tests) and during practicals. The student can undertake the final writtent exam in the examination period if he/she reached at least the E mark in the three tests and practicals. The final assessment is an average of the marks reached in the three tests and practicals and final exam.

Grading Scale (in %):

Grading System: The University recognises the following six degrees for the Assessment Methods and Criteria of the study results: a) A – excellent (excellent results) (numerical value 1) b) B – very good (above average results) (1.5) c) C – good (average results) (2) d) D – satisfactory (acceptable results) (2.5) e) E – sufficient (results meet the minimum criteria) (3) f) FX –failed (requires further work) (4)

Bibliography

Marshal, G. F., 2004: Handbook of optical and laser scanning. NewYork: Marcel Dekker, 2, 792p., ISBN 08-247-5569-3.

Vosselman, G. & Mass, H. G., 2010: Airborne and Terrestrial Laser Scanning. 1st. ed. Boca Raton: CRC Press. 336p. ISBN 978-143-9827-987.

Shan, J. and Toth, Ch.K., 2009. Topographic Laser Ranging and Scanning: Principles and Processing. Boca Raton: Taylor & Francis Group. 598p. ISBN (13) 978-1420051421.

Surphaser 3D Scanners [online]. 1995-2011, [cit. 2012-03-11]. Available at: http://www.surphaser.com/